

AMENDMENT

Attorney Docket: Case 6013D

Application No. 09/894,558

Reply to Office Action of March 25, 2004

Amendments to the Claims:

The Examiner's attention is respectfully directed to the Remarks section of this paper in order to gain a more complete understanding of the claim amendments being submitted herein. The following list of claims will replace all prior versions and listing of claims in the application:

Claims 1-37 (cancelled by way of this amendment or a previous amendment)

38. (new) In a method for receiving and scrubbing an industrial flue gas containing mercury with an aqueous alkali reagent in a scrubber, the improvement comprising:

generating hydrogen sulfide proximate to the scrubber by providing alkali to a solution comprising sodium sulfide or potassium sulfide;

supplying the hydrogen sulfide to the scrubber to remove mercury from the industrial flue gas.

39. (new) The method according to claim 38, further comprising supplying air to the hydrogen sulfide to produce a mixture of air and hydrogen sulfide and wherein the supplying the hydrogen sulfide comprises providing the mixture of air and hydrogen sulfide; and

40. (new) The method according to claim 38, further comprising controlling the supplying the hydrogen sulfide step by adjusting at least one of the supply of acid and alkali to said solution to alter the pH of said solution and, correspondingly, a vapor pressure of the generated hydrogen sulfide.

41. (new) The method according to claim 39, wherein the hydrogen is supplied to the scrubber at multiple locations within the scrubber by way of at least one of a plurality of pipes and a plurality of air foils, each having apertures therein, for discharging the mixture of hydrogen sulfide and air into the flue conveying the industrial flue gas.

42. (new) The method according to claim 38, wherein kraft green liquor is used to generate the hydrogen sulfide.

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43. (new) The method according to claim 42, further comprising controlling the supplying the hydrogen sulfide step by adjusting the pH of the kraft green liquor and, correspondingly, a vapor pressure of the generated hydrogen sulfide.

44. (new) The method according to claim 40, wherein kraft green liquor is used to generate the hydrogen sulfide.

45. (new) The method according to claim 38, wherein the scrubber is a wet scrubber.

46. (new) The method according to claim 38, wherein the scrubber is a dry scrubber.

47. (new) The method according to claim 38, wherein the step of supplying the hydrogen sulfide to the industrial gas occurs at a rate sufficient to produce a concentration of hydrogen sulfide in the industrial gas of about 0.05 to 10 ppm.